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a WHAT IS CLAIMED IS
Patent claims

- 15 1. Adhesive system for forming reversible adhesive
bonds, comprising at least one polymeric adhesive
component based on polyurethanes and/or polyureas
and/or epoxy resins and at least one additional
20 additional component, characterized in that the at least one
additional component comprises at least one
functional group which can be activated by
introduction of energy, in such a way that a
chemical reaction with the adhesive component takes
place, involving at least partial breakdown of the
25 adhesive component.
- 30 2. Adhesive system according to Claim 1, characterized
in that the additional component is admixed to the
adhesive component.
- 35 3. Adhesive system according to one of the preceding
claims, characterized in that the additional
component is activatable by thermal energy and/or by
radiative energy.
- 40 4. Adhesive system according to one of the preceding
claims, characterized in that the additional
component is blocked in its reactivity by at least
one protective group and/or by encapsulation and/or
by enclosure in inorganic structures and the
blocking can be eliminated by introduction of
energy.

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5. Adhesive system according to Claim 4, characterized in that the blocking can be eliminated by thermal energy and/or by radiative energy.
- 5 6. Adhesive system according to one of the preceding claims, characterized in that it comprises as additional component one or more organic amines.
- 10 7. Adhesive system according to one of Claims 1 to 5, characterized in that it comprises an adhesive component based on epoxy resins and, as additional component, one or more organic acids.
- 15 8. Adhesive system according to Claim 6 or 7, characterized in that the amine and/or the acid are enclosed in capsules or microcapsules, preferably made of amino resin.
- 20 9. Adhesive system according to Claim 6 or 7, characterized in that the amine is incorporated in a metal halide complex, especially with lithium bromide and/or sodium chloride.
- 25 10. Adhesive system according to one of the preceding claims, characterized in that the adhesive component has been modified by means of at least one structural component attached chemically to the adhesive component, the structural component being selected so that, as a result of the activation of the additional component, a chemical reaction takes place with the structural component, involving at least partial breakdown of the adhesive component.
- 30 11. Adhesive system according to Claim 10, characterized in that the at least one structural component is incorporated by copolymerization into the adhesive component.
- 35 12. Adhesive system according to Claim 10 or 11, characterized in that the at least one structural
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component is at least one triazine derivative.

13. Process for the reversible bonding of articles and controlled parting of the adhesive bonds between these articles, characterized by the following steps:
- preparation of an adhesive bond using an adhesive system according to one of Claims 1 to 13,
 - deactivation of the adhesive bond by introduction of energy,
 - separation of the articles from one another.
14. Process according to Claim 13, characterized in that the energy is introduced by heat supply, especially by means of thermal conduction or convection, and/or electromagnetic radiation, especially infrared radiation or microwaves.
15. Process according to one of Claims 13 and 14, characterized in that articles of metal, plastics, glass or textiles are bonded, in each case individually or with one another.
16. Use of the adhesive system according to one of Claims 1 to 12 or of the process according to one of Claims 13 to 15 for bonding components in motor vehicles.
17. Use of the adhesive system according to one of Claims 1 to 12 for producing production line adhesives.

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